Safe Access to Transit: Integrating Transit Operations with Pedestrian and Bicycle Safety and Mobility Best Practices

AMPO 2014
October 23, 2014
Presentation Overview

- Pedestrian (and bicycle) safety problem and the relationship to transit
  - FHWA Focus Cities/States Program (for national context)
  - Tampa Bay region crash statistics
  - Overview of the Pedestrian Safety Action Plan Process (and the role of MPOs in this process)
  - Explanation of pedestrian/bicycle safety correlation with transit

- Safe Access to Transit project objectives and organization
  - Scope overview
  - Funding source
  - Agency coordination/roles

- Strategic planning task
  - Study site-selection process (data and analysis)
  - Policy review (analysis of LRTPs, CMPs, and TDPs for institutional capacity-building purposes)
  - Funding solutions (Systemic Highway Safety Improvement Program funding justification under MAP-21)

- Case study improvement recommendations
  - Field review process, including the use of mobile applications for data collection
  - Example outcomes/recommendations
TRANSIT AND PEDESTRIAN (& BICYCLE) SAFETY RELATIONSHIP
### Purpose/Need

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<tr>
<th>State Name</th>
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- **Highest Number of Per Capita Pedestrian Fatalities**
- **Second Highest Number of Per Capita Pedestrian Fatalities**
- **Third Highest Number of Per Capita Pedestrian Fatalities**
### Purpose/Need

**Danger Index:**
- **Per Capita Pedestrian Fatalities**
- **Percent of Pedestrians Walking to Work**

#### TABLE 1

<table>
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Pedestrian Safety Action Plans

- Data-driven process
- Multidisciplinary
- Best practices/countermeasures
- Consensus building
• Most pedestrian crashes...
  – Occur when pedestrians attempt to cross major roadways
  – Involve adult pedestrians
Purpose/Need

- There is an over-representation of pedestrian crashes...
  - At night (about 40%)
  - In low income/auto-ownership areas
Most pedestrian crashes occur when pedestrians attempt to cross major roadways.
5% of major road mileage accounts for 40% of all pedestrian crashes
Most of these roadway corridors include transit service.
Purpose/Need
Every bus stop is a pedestrian crossing, whether designed accordingly...
Every bus stop is a pedestrian crossing, whether designed accordingly... or not.
How far are you willing to go for an “improved” crossing?

Would you walk:

- 75’
- 150’
- 225’
- 300’
How far are you willing to go for an “improved” crossing?

Would you walk:

- 75’
- 150’
- 225’
- 300’
Pedestrian safety and transit correlate:

- Geographically
- Demographically

Providing safe access to transit

- Benefits transit riders
- Provides focal points for pedestrian safety investment along corridors—a benefit to all pedestrians!
- Can improve route and roadway performance
FDOT’S
“SAFE ACCESS TO TRANSIT” INITIATIVE
• **Promote** regional bike/pedestrian **safety** on roadways and transit corridors

• Identify enhancement and practices to **create safe, comfortable, accessible, and welcoming bicycle/pedestrian environments**

• **Encourage multi-modal activity** to generate economic vitality
Safe Access to Transit Concept

- Funding provided through Federal Highway Safety Improvement Program (HSIP)
- Also working to leverage other projects/efforts
Safe Access to Transit Concept

- FDOT is “owner” of roadway but agency coordination is critical...
  - Transit agencies
  - Local governments
  - MPOs
- Use of modified road safety audit approach (multi-agency, multi-disciplinary)
- Debriefing within FDOT and also with transit agencies
Site Selection/Prioritization

- Identify & prioritize locations based on:
  - High stop-level ridership
  - History of bicycle and pedestrian crashes
  - Transit agency input
  - *Initially focused on “on-system” stop locations*

- Stop-Area Ridership
- Pedestrian & Bicycle Crashes
Site Selection/Prioritization

- Developed a quantifiable ranking system:

```
  7  6
 V  
IV  
III 
II  
I   
---
Low
---
Stop Ridership

Bicycle & Pedestrian Crashes

Tiers

---
Low
---
High

```

Priority Ranking:
1 (Highest)
2
3
4
5
6
7 (Lowest)
Site Selection/Prioritization

• Solicited transit agency input
• Additional considerations:

Roadway Projects
  • FDOT Work Program
  • Local Capital Projects

Roadway Data
  • AADT
  • Pavement Conditions
  • Number of Lanes
  • Speed
  • Existing Lighting
  • Existing Sidewalks/Bike Lanes

Land Use
  • Planning Areas (CRAs)
  • Activity Centers
Site Selection/Prioritization

- Locations Selected for Initial Field Reviews:
  - Missouri Ave from Rosery Rd to Belleair Rd
  - Walsingham Rd at Indian Rocks Rd
  - Gulf to Bay Blvd at Belcher Rd
  - U.S. 19 at SR 52
  - U.S. 19 at Moos Rd
  - Hillsborough Ave Ambassador Dr F Hankey Rd
  - Florida Ave at Linebaugh Ave
  - Nebraska Ave from River to Busch Blvd
  - 4th St N at 9th Ave N
  - 56th St at 8th Ave
  - 50th St at 7th Ave
  - Broadway Ave
Site Selection/Prioritization

- **Identify** contributing safety **deficiencies** impacting bicycle/pedestrian **movement** and access to transit
- **Assessment** of existing bicycle/pedestrian/transit **facilities** and transit/traffic **operations**
- **Observation** of general travel **patterns** and behavior (traffic/pedestrian/bicycle/transit)
Plan/Policy Review

- Focus:
  - Long Range Transportation Plans
  - Congestion Management Processes
  - Transit Development Plans

- Policy statements

- Prioritization Criteria

- Show me the money!
Plan/Policy Review

• Broward MPO Example:
  – Regionally significant corridor congestion management/livability projects
  – Categorical funding for Complete Streets and Mobility Hubs

• At DOT a road safety audit program/policy is key!
Funding Justification

• Benefit/Cost or Net Present Value approach:

  Crash History x Percent Reduction x Crash Cost

  Cost of Project

• Effective for high-crash locations with clear pattern
• Less effective for low-frequency/high-severity events
Funding Justification

• Systemic Approach:
  – Established patterns of crash causation
  – High priority location
  – Known best practice solutions

• Encouraged by SAFETEA-LU

• Required by MAP-21

• But the formula is uncertain...
CASE STUDY
ISSUES/FINDINGS
Typical Issues

- Far-side with bus bay
- Near-side
- Far-side, no bus bay
Typical Issues

Near-side

Advantages:
• Stops are closest to signal/crosswalks
• Bus leaves signal at the head of the “platoon”
• Bus may board/alight during red – no wasted time

Disadvantages:
• Conflict with right turning vehicles
• When bus stops on green, thru vehicles are blocked
• Bus approaching on green is likely to miss the signal
Stops at Signalized Intersections: Near-side vs. Far-side

Far-side

Advantages:
• Does not impact right-turning traffic
• Thru queue can proceed thru light (depending on distance to intersection)
• Bus may proceed thru when approaching a green signal

Disadvantages:
• Stop is further from signal/crosswalks
• Bus cannot use red signal to effect boarding/alighting
Findings

Busch Blvd at Nebraska Ave:

- Install/complete sidewalk
Findings

• Longer Term
  – Reduce Radii, eliminate right turn channels
  – Shift stop to immediate nearside
  – Provide ADA access across RR tracks
Findings

• Enhance Intersection Lighting:
Findings

- Relocate bus stops
  - Close to signalized intersections/protected crossings
Findings

- Implement recommendations
  - Some may require further analysis
- Work program coordination
  - Incorporate strategies into the “scoping” process
- Project funding strategies
  - Identify potential funding sources other than HSIP
- Community engagement, input, and education